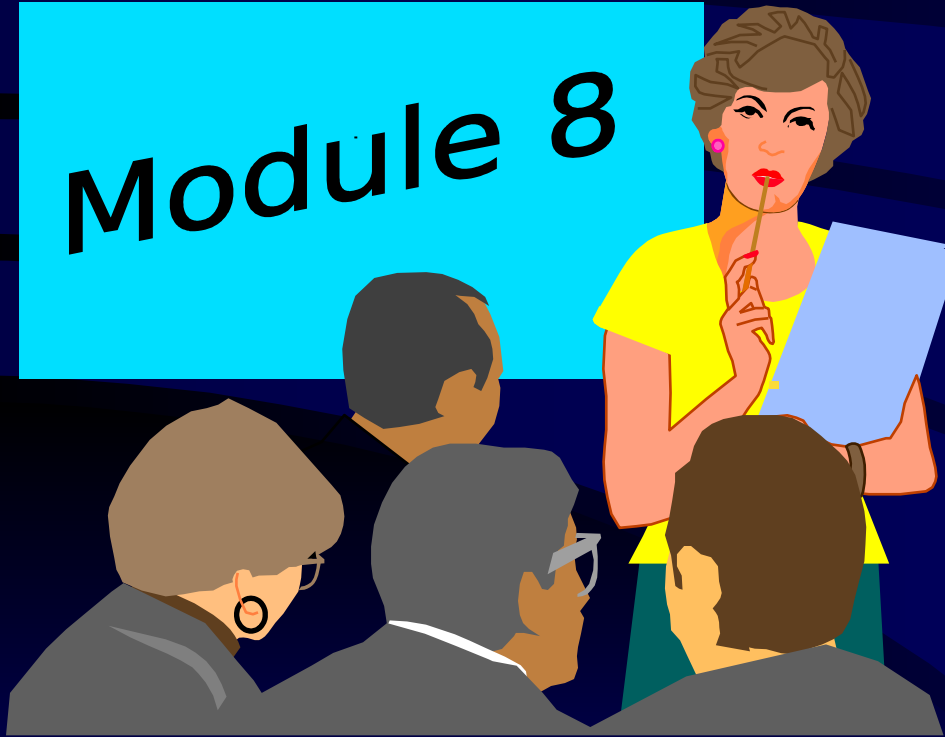


Interviewing Functional Specialists

Module 8



**ESC Cost Core Training
Developed By**

**USAF ESC/FMC
Hanscom AFB, MA
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7 Steps of the Cost Estimating Process

1. Define and Plan

2. Specify Estimating Methodology

3. Calculate -- Including What-ifs & Alternatives

4. Time Phase in Base Year Dollars

5. Inflate to Then Year Dollars

6. Wrap Up Documentation

7. Complete Final Reviews

What Information?

Technical, Schedule and Quantity
Information

What Information From Functional Specialists?

- Potential ground rules and assumptions
- Cost drivers
- Potential analogies & their scaling factors
- Inputs to CERs and cost models
- Percent complete
- Inputs to Risk and ECO analyses
- Inputs to time phasing methodologies

Which Functional Specialists?

- Top people
- Correct expertise
- Cost effective
- Independent

What to Know Before Contacting a Functional Specialist

- Specific information
- Specific questions

How to Obtain Information from Functional Specialists?

- Clear, logical, probing questions
- Help specialists think through their answers
- Don't ask questions just one way
- Spot uncertainty in their answers
- Evaluate information obtained

Example #1

Estimator: “What is the development schedule?”

Engineers: “30 months”

Estimator: “What if I said I’m sure the development will take 36 months? Would you believe me?”

Engineers: “Yes, it could take that long.”

Estimator: “What if I said 4 years?”

Engineers: “Could be.”

Estimator: “If I said 5 years, would you laugh?”

Engineers: “Yes, we would start to laugh at 4 & a half.”

Example #2

EstimatorA: “What is the most likely range estimate for Lines of Code?”

Engineer: “50K to 70K LOC”

EstimatorA: “What would you say if it turned out to be 100K or 120K?”

Engineer: “No way” (so the estimator left)

(another estimator, uncomfortable with the engineer’s inputs, scheduled a follow-on meeting)

EstimatorB: “What if God said it would be 120K LOC?”

Engineer: “No, my personal expertise tells me 50K LOC.”

Estimator B: “What if the contractor said it would be 120K LOC?”

Engineer: “I already have an estimate from the Sole Source Contractor who says it is 150K LOC.”

Example #3

The cost analyst requested PMP quantities including all dead-end units, explaining to the specialists exactly what dead-end units are.

The estimator asked the engineers if the PMP quantities include System Test spares requirements. The experts said “Yes” and the estimator was satisfied.

Later, during an Estimate Review, the cost analyst is asked to reconfirm the fact that the System Test Spares are included in the estimate. The functional specialists respond - “No, test spares are not included in the quantities.”

Example #4

Estimator: “How many
development radar units are
required?”

Engineer: “Three”

Estimator: “Thanks”

Example #5

- An estimator is using the SEER Software Cost Model to estimate System Software costs.
- “Percent re-test” is an input parameter.
- On this Program the FAA is responsible for designing, developing and testing the original software. After the FAA completes its testing, DoD is to modify some portion of the code and re-test the software.
- The functional specialists provide the input parameter of “percent re-test” as 100%.

Example #6

- A key input into a model the estimator is using is the overall experience level of the design team.
- The functional specialists say the Contractor has some of the highest quality talent.
- The input is “very high”.
- The estimator uses this input in the model.

Example #7

Estimator: “What Black Boxes are similar to Black Box A?”

Functional Specialist: “There are no similar boxes.”

The estimator, resigned to the fact that the analogy methodology is inapplicable, leaves the meeting.

Example #8

Estimator: “What is the most likely schedule range for the hardware design effort?”

Functional Specialist: “18 to 22 months”

Is the interview complete? Should the estimator be satisfied and leave?

Example #9

- An estimator visits the Contractor's plant early in development to update the Program estimate for development and production.
- Historical or actual costs are not available yet.
- The estimator asks the Contractor's functional specialists to identify all the similar hardware or software they have completed or nearly completed.
- The specialists say their company has not developed anything similar.